

Tasman District Council

Stormwater
Activity Management Plan

2012 - 2022

October 2011

Quality Assurance Statement		
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For full Quality Assurance Statement, Refer Appendix Z

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1 KEY ISSUES FOR THE STORMWATER ACTIVITY

The most important issues relating to the stormwater activity are shown below in Table 1-1.

Table 1-1: Key Issues for the Stormwater Activity

Key Issue	Council Approach
<p>Capacity issues in Urban Drainage Areas (UDA) have had projects identified based on anecdotal evidence only. Hydraulic modelling exists for Richmond and Motueka but not all secondary (overland) flow paths have been identified. There are areas that are unable to meet the minimum desired Level of Service of containing a 1 in 5 year storm – these are not documented.</p>	<p>Some projects have been identified to address historical capacity issues. Catchment Management Plans (CMPs) and modelling will be used to identify secondary flow paths and to identify other capacity projects.</p>
<p>Peri-urban drainage issues are complex and involve properties inside and outside the UDA boundary. Work may be done to resolve a problem inside the UDA boundary and be paid for by properties within the UDA, but it may require physical works outside the UDA boundary and may provide benefit to properties outside the UDA.</p> <p>Funding is provided by UDA but issues and solutions may be specific to catchments. This creates an issue between UDAs and catchments.</p> <p>Responsibility for maintenance of drains in the peri-urban area may not be clear between private property owner, Council's stormwater activity, Council's transport activity, or Council's rivers activity.</p>	<p>CMPs are being developed for all urban areas. These CMPs are broad enough in scope to include peri-urban and rural areas that are part of the catchment. It is intended that these CMPs will lead to identification of problems and solutions catchment by catchment not UDA.</p> <p>Council has a project planned to improve drainage issues within the peri-urban area of Richmond that will provide clarity about responsibilities and funding.</p>
<p>Investigations into receiving environments are not complete. Understanding current state of receiving environments is key to understanding the impact of urban stormwater discharges on that environment.</p> <p>Catchment management planning needs to involve both the regulatory part of Council who control discharges to the environment and Engineering who receive urban stormwater run-off and then discharge into a receiving environment. This requires a 'whole of Council' approach to catchment management planning.</p>	<p>Investigations into receiving environments have been ongoing for some time. These investigations will enable Council to describe baseline environmental conditions and to set targets discharges to those receiving environments. This will be an input to the catchment management plans.</p> <p>Preparation of CMPs will involve all relevant parts of Council. Council intends to use CMPs to improve knowledge of catchments, stormwater quality issues, and as a tool to make informed decision when gaining resource consents for stormwater discharges.</p>
<p>Lack of policy on management of stormwater systems owned by others that interface with Council systems (Council's transportation activity, NZ Transport Agency (NZTA) and private).</p>	<p>Issues are addressed case by case as they arise. It is intended that the CMPs will help to identify all key quality and capacity issues in each catchment.</p>

2 ACTIVITY DESCRIPTION

2.1 What We Do

Council manages its stormwater activities under 16 Urban Drainage Areas (UDA) and one General District Area. The General District Area covers the entire District outside the UDA which typically includes small communities with stormwater systems that primarily collect and convey road run-off to suitable discharge points.

This activity encompasses the provision of stormwater collection, reticulation, and discharge systems in Tasman District. The assets which provide this service include drainage channels, piped reticulation networks, tide gates, detention or ponding areas, inlet structures and discharge structures.

The stormwater sumps and road culvert assets are generally owned and managed by Council's Transportation Group or by the NZ Transport Agency, depending upon whether they are located on local roads or state highways. This activity also does not include land drains or river/stream systems. These are either the responsibility of Council under the Rivers Activity Management area or the responsibility of the landowners.

A complete description of the assets included in the stormwater activity is in Appendix B.

2.2 Why We Do It

To minimise the risk of flooding of buildings and property. By providing a high quality stormwater network, the Council enables the safe and efficient conveyance and disposal of stormwater from urban drainage areas which improves the economic and social wellbeing of the District.

3 COMMUNITY OUTCOMES AND OUR GOAL

The community outcomes that the stormwater activity contributes to most are shown in Table 3-1.

Table 3-1: Community Outcomes

Community Outcomes	How Our Activity Contributes to the Community Outcome
Our unique and special natural environment is bountiful, healthy, clean and protected.	Stormwater arising within urban development areas is controlled, collected, conveyed and discharged safely to the receiving environment. This activity can be managed so the impact of the discharges does not adversely affect the health and cleanliness of the receiving environment.
Our built urban and rural environments are functional, pleasant, safe and sustainably managed.	Our stormwater activity ensures our built urban and rural environments are functional, pleasant and safe by ensuring stormwater is conveyed without putting the public at risk or damaging property, businesses or essential infrastructure.
Our transport and essential services are sufficient, efficient and sustainably managed.	The stormwater activity is considered an essential service that should be provided to all properties within urban drainage areas in sufficient size and capacity. This service should also be efficient and sustainably managed.

Table 3-2: Our Goal

Council aims to achieve an acceptable level of flood protection in each UDA and the remaining General District stormwater areas.

4 OPERATIONS, MAINTENANCE AND RENEWALS STRATEGY

4.1 Operations and Maintenance

Day to day operational, inspection and maintenance of the stormwater systems is carried out by Downer NZ Ltd under the maintenance contract C688. This maintenance contract is administered by MWH New Zealand Ltd under the professional services contract C461.

Both of the contracts were competitively tendered on the open market (C461 in 2000 and C688 in 2007). C461 has been extended until March 2013 and C688 potentially runs until 2014, dependent on successful re-negotiations. Both contracts are primarily based on a comprehensive schedule of rates and a combination of lump sum payments. This provides all parties involved with a vested interest in optimising both pro-active and reactive maintenance requirements. Although they are not specifically set up as one, the contracts are in many respects similar to a partnering agreement with all parties working closely together with the same goal in mind, ie. delivering a high level of service and providing value for money for the Council ratepayers.

Some of the key aspects of this contract are:

- performance based
- emphasis on proactive maintenance
- programme management
- quality management
- detailed schedule of works
- measurement of performance
- team approach to problem solving.

Operation and maintenance is discussed in detail in Appendix E.

4.2 Renewals

Renewal expenditure is major work that does not increase asset design capacity but restores, rehabilitates, replaces or renews an existing asset to its original capacity. Work over and above restoring an asset to original capacity is new works expenditure.

Assets are considered for renewal as they near the end of their effective working life or where the cost of maintenance becomes uneconomical and when the risk of failure of critical assets is sufficiently high.

The renewal programme has been developed by the following.

- Taking asset age and remaining life predictions from the valuation database, calculating when the remaining life expires and converting that into a programme of replacements based on valuation replacement costs.
- Reviewing and justifying the renewals forecasts using the accumulated knowledge and experience of asset operations and asset management staff. This incorporates the knowledge gained from tracking asset failures through the Customer Services System, the GPS locating of pipe breaks and overflows, and contract reporting structures.
- Undertaking an optimising review to identify opportunities for bundling projects across assets, optimised replacement, timing across assets – especially between pipe upgrades and roading works, and smoothing of expenditure.

The renewal programme is reviewed in detail at each AMP (ie. three yearly), and every year the annual renewal programme is reviewed and planned with the input of the maintenance contractor.

Renewals are discussed in detail in Appendix I.

5 EFFECTS OF GROWTH, DEMAND AND SUSTAINABILITY

5.1 Population Growth

The Council has developed a Growth Demand and Supply Model (GDSM) to forecast the population and business growth in the District and the implications of this growth on network infrastructure. The GDSM is described in brief in Appendix F and in more detail in a separate model description report.

The ultimate outputs of the GDSM include a projection of the district's population, and forecast of where and when new dwellings and business buildings will be build and a forecast of the number of new water connections. This is summarised in Appendix F. The population projection for Tasman District Council is shown in Figure 5-1.

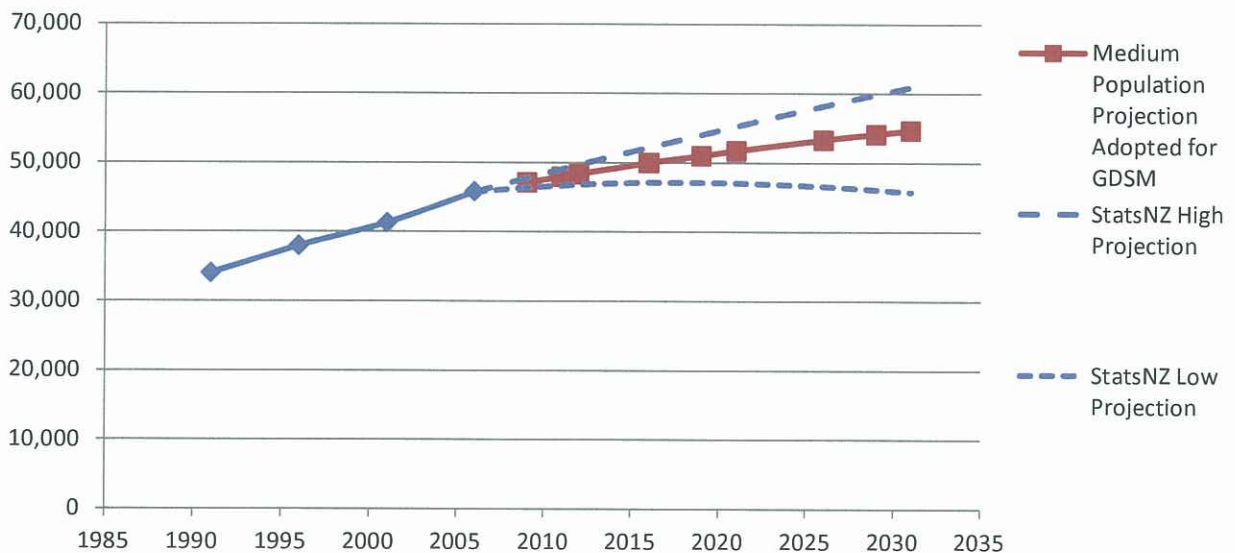


Figure 5-1: Projected Population Growth for Tasman District

The forecast of population growth has been used to determine where and when Council infrastructure needs to be developed and at what capacity. Council has also considered the influence of changing demographics, community expectations, industrial/commercial demand, technology and legislation on the demand for this service.

As a result of the recession and general slowdown in development since 2008, Council has:

- adopted lower population projections for Richmond and Motueka (in 2008 Council adopted Statistics New Zealand high growth projections), this time they have adopted medium growth projections.
- assumed there would be no business growth until July 2012 that would have a significant demand on infrastructure.

From these analyses and assumptions, Council has a moderate forecast of growth for the district. However there are a number of projects where growth is a contributing factor and allowance has been made in the design of future works and in funding arrangements. The growth major projects are listed in Table 8-1 and are identifiable by the project driver column.

5.2 Sustainability

The Local Government Act 2002 requires local authorities to take a sustainable development approach while conducting its business, taking into account the social, economic and cultural well-being of people and communities, the need to maintain and enhance the quality of the environment; the reasonably foreseeable needs of future generations.

Sustainable development is a fundamental philosophy that is embraced in Council's Vision, Mission and Objectives, and that shapes the community outcomes. The levels of service and the performance measures that flow from these inherently incorporate achievement of sustainable outcomes.

Many of the Council's cross-organisational initiatives are shaped around community well-being (economic, social, cultural and environmental) and taking into consideration the well-being of future generations. This is demonstrated in:

- Council's Integrated Risk Management approach which analyses risks and particularly risk consequences in terms of community well-being
- Council's Growth Demand and Supply Model which seeks to forecast how and where urban growth should occur taking into account opportunities and risks associated with community well-being
- Council adopting a 20 year forecast in the Activity Management Plans to ensure the long term financial implications of decisions made now are considered.

At the activity level, a sustainable development approach is demonstrated by the following:

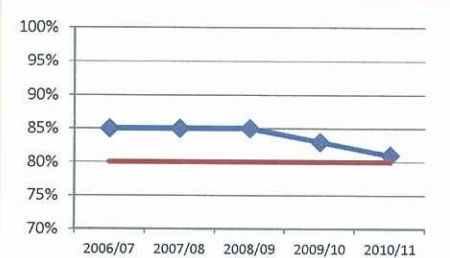
- catchment management within the Urban Drainage Areas
- taking climate change into consideration in hydraulic modelling
- consideration of low impact design where appropriate
- planning for future drainage before growth occurs.

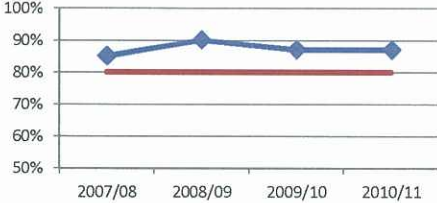
6 LEVEL OF SERVICE AND PERFORMANCE MEASURES

Table 6-1 summarises the levels of service and performance measures for the stormwater activity. Development of the levels of service is discussed in detail in Appendix R.

Table 6-1: Levels of Service

ID	Levels of Service (we provide)	Performance Measure (We will know we are meeting the level of service if...)	Current Performance	Future Performance			Future Performance (targets) in Year 10 2021/22
				Year 1	Year 2	Year 3	
				2012/13	2013/14	2014/15	
Community Outcome: Our unique and special natural environment is bountiful, healthy, clean and protected.							
1	Our stormwater systems do not adversely effect or degrade the receiving environment.	<i>Council has resource consents in place for each of the 16 stormwater UDAs. Resource consents are held in Council's Confirm database.</i>	Actual = Resource consents will be obtained once a Stormwater Catchment Management Plan has been developed for the UDA.	0	1 / 16 (Richmond)	2 / 16 (Richmond and Motueka)	16 / 16
2		<i>We have stormwater UDA management plans (SWCMPs) for each urban drainage area.</i>	Actual = Work has begun on the Stormwater Catchment Management Plan for Richmond. This will be complete and in place by the end of Year 1.	1 / 16 (Richmond)	2 / 16 (Richmond and Motueka)	3 / 16 (Richmond, Motueka and Mapua)	16 / 16
Community Outcome: Our built urban and rural environments are functional, pleasant, safe and sustainably managed.							
3	Our stormwater systems collect and convey stormwater safely through urban environments, reducing the adverse effects of flooding on people and residential and commercial buildings.	<i>There are no public complaints to Council of residential or commercial buildings being flooded as a result of failure of Council's stormwater systems to cope with the current design capacity (this excludes flooding from rivers, private drainage failure). As measured through complaints received through customer services and recorded in the Confirm database.</i>	Actual = Council need to ensure this information is fully recorded in Confirm.	0	0	0	0

ID	Levels of Service (we provide)	Performance Measure (We will know we are meeting the level of service if...)	Current Performance	Future Performance			Future Performance (targets) in Year 10 2021/22																																		
				Year 1	Year 2	Year 3																																			
				2012/13	2013/14	2014/15																																			
4		<i>Existing systems are capable of containing a 1 in 5 year storm event.</i>	<p>Actual = The table below shows the % of areas capable of containing a 1 in 5 year storm. This table will be reassessed on a three yearly basis.</p> <table border="1"> <thead> <tr> <th>UDA</th> <th>≥ 1 in 5 Yr Storm</th> </tr> </thead> <tbody> <tr><td>Richmond</td><td>80%</td></tr> <tr><td>Brightwater</td><td>70%</td></tr> <tr><td>Wakefield</td><td>60%</td></tr> <tr><td>Murchison</td><td>40%</td></tr> <tr><td>St Arnaud</td><td>80%</td></tr> <tr><td>Tapawera</td><td>90%</td></tr> <tr><td>Motueka</td><td>80%</td></tr> <tr><td>Mapua/ Ruby Bay</td><td>90%</td></tr> <tr><td>Tasman</td><td>60%</td></tr> <tr><td>Kaiteriteri</td><td>80%</td></tr> <tr><td>Takaka</td><td>70%</td></tr> <tr><td>Pohara</td><td>40%</td></tr> <tr><td>Ligar Bay/Tata Beach</td><td>70%</td></tr> <tr><td>Collingwood</td><td>70%</td></tr> <tr><td>Patons Rock</td><td>30%</td></tr> <tr><td>Average</td><td>67%</td></tr> </tbody> </table>	UDA	≥ 1 in 5 Yr Storm	Richmond	80%	Brightwater	70%	Wakefield	60%	Murchison	40%	St Arnaud	80%	Tapawera	90%	Motueka	80%	Mapua/ Ruby Bay	90%	Tasman	60%	Kaiteriteri	80%	Takaka	70%	Pohara	40%	Ligar Bay/Tata Beach	70%	Collingwood	70%	Patons Rock	30%	Average	67%	75%	75%	75%	100%
UDA	≥ 1 in 5 Yr Storm																																								
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Community Outcome: Our stormwater and essential services are sufficient, efficient and sustainably managed																																									
5	Our stormwater activities are managed at a level which satisfies the community.	<i>% customers satisfied with the stormwater service. As measured through the annual resident survey.</i>	<p>Actual = 81%</p> <p>The Communitrak™ survey was undertaken in May/June 2011. 81% of receivers of the service were found to be satisfied with the service they receive.</p> 	80%	80%	80%	80%																																		

ID	Levels of Service (we provide)	Performance Measure (We will know we are meeting the level of service if ...)	Current Performance	Future Performance			Future Performance (targets) in Year 10 2021/22
				Year 1	Year 2	Year 3	
				2012/13	2013/14	2014/15	
6		Number of complaints relating to health nuisance (odour, mosquitoes, noise...). As measured through complaints received through customer services and recorded in the Confirm database	Actual = 0 Council need to ensure this information is fully recorded in Confirm.	<10	<10	<10	<10
7	We have measures in place to respond to and reduce flood damage to property and risk to the community within stormwater UDAs.	% of faults responded to within Contract time frames. eg. Priority = clear obstructions in stormwater system in one working day As recorded through Council's Confirm database	Actual = 97% The operations and maintenance contractor is required to meet a target of 90% of faults to be responded to and fixed within specified timeframes. This is monitored through Contract 688.	>90%	>90%	>90%	>90%
8		All open drains are maintained in a flood ready state As measured through audits undertaken by the Engineer.	Actual = 88% 	80%	80%	80%	80%
9		Critical stormwater assets are maintained in a flood ready state and checked prior to any event in which weather warnings are notified. As recorded through audits carried out by the Contract Engineer.	Actual = Critical assets are identified and assessed for Risk. Where mitigations measures are required, they have been included for action in the AMP.	100%	100%	100%	100%

7 CHANGES MADE TO ACTIVITY OR SERVICE

Table 7-1 summarises the key changes for the management of the stormwater activity since the 2009 AMP.

Table 7-1: Key Changes

Key Change	Reason for Change
Tasman Resource Management Plan Part IV Rivers and Lakes (2011)	Part IV of the TRMP constitutes the regional plan provisions controlling any activities in the beds of rivers or lakes. This may include some drains owned and maintained by Council.
Moving towards obtaining Resource Consents for stormwater discharges	Council have a legal obligation to obtain resource consents for their stormwater discharges. This requirement is not yet enforced, but Council are looking to take a catchment management approach to stormwater through the life of this AMP. Catchment Management Plans will drive the resource consent applications.

8 KEY PROJECTS

Table 8-1 details the key capital and renewal work programmed for years 2012 to 2022. A full list of capital and renewal projects for the 20 year period is included in Appendix F and I respectively.

Table 8-1: Significant Projects

Project Name	Description	Year 1 (\$)	Year 2 (\$)	Year 3 (\$)	Years 4 to 10	Project Driver ¹
Brightwater - Mt Heslington Drain Diversion	Improve Railway Diversion drain plus new Mt Heslington Stream diversion. Rintoul Place, block off 1 No. 375 dia. culvert and ditch along SH to drain towards the stock yard.	103,020			1,957,380	G / LoS
Collingwood - Gibbs Road Diversion	New 600 pipe to intercept stormwater flows on Gibbs Road. Total length of new 600 dia pipe is 125m. Also construct gravel interception chamber at bottom of Gibbs Road.			71,030	639,270	G / LoS
Motueka - New Development Areas	Network upgrade to accommodate new development and upgrade existing system from the area north of King Edward Street and connecting to the Woodland Drain.			102,016	2,448,384	G / LoS
Richmond - Beach Road	Box culvert/ open channel concrete ditch .				4,394,700	G / LoS
Richmond - Hill Street	New stormwater system from Kingsley Place to Hill Street and along to Angelis Avenue.				1,243,588	G / LoS
Richmond - Middlebank Drive	Installation of stormwater pipe from Gladstone Road to Olympus Drive to Middlebank Drive.			186,030	3,534,570	G / LoS
Richmond - Park Drive	Increase capacity through Ridings Grove. Duplicate line in walkway reserve and upgrade Hill Street crossing to Q50. Do in two parts: Hill Street culverts, then Riding Grove pipe.				978,600	G / LoS
Richmond - Poutama Drain	New box culvert to divert stormwater from King Street/Gladstone Road and Waverly Street/Gladstone Road to new open drain out to Borck Creek.	141,490	141,490	2,405,330	141,490	G / LoS
Richmond - Queen Street	Intercept flows upstream junction Salisbury Road and provide additional hydraulic capacity, by replacing existing 900 dia. pipe	73,752	147,504	196,672	2,040,472	G / LoS

¹ R = Renewal, LOS = Levels of Service, G = Growth

Project Name	Description	Year 1 (\$)	Year 2 (\$)	Year 3 (\$)	Years 4 to 10	Project Driver ¹
	with twin 1050 dia. pipe (over 520m) and single 900 dia. pipe over 360m.					
Richmond - Salisbury Road Upgrade	Extend to William Street				590,300	G / LoS
Richmond - Ranzau Road/ Paton Road/White Road	Upgrade to White Road and Ranzau Road at Paton Road intersection.	48,470	38,776	106,634	775,520	G / LoS
Takaka - Meihana Street Upgrade	New stormwater pipes.				631,985	
Wakefield - Whitby Road to Arrow Street	Upsize the existing stormwater pipe along Whitby Road from Arrow Street to discharge into the Pitfure Stream.				575,911	G / LoS

Note:

1. See Appendix F for a full detailed list of new capital works projects driven by growth (G) and or an increase in level of service (LoS).
2. See Appendix I for a full detailed list of renewal projects.

9 MANAGEMENT OF THE ACTIVITY

9.1 Demand Management

Project Stormwater is a cross-council project incorporating Engineering, Planning, and Environmental Science.

Project Stormwater is focused on improving Council's management of stormwater to achieve better stormwater values, including quality, quantity and ecological aspects. It covers many departments, affects multiple council processes and represents a fundamental change to Council philosophy regarding stormwater and associated land and activity management.

The scope of the project includes a low impact philosophy and to include various aspects of land and activity management, for example, subdivision development, that impact either directly or indirectly on stormwater values. A key goal for the project is an increasing uptake of low impact approaches and successful design and implementation of these developments amongst local developers. This will have a positive impact on demand management (capacity requirements).

All projects identified and delivered under the Stormwater AMP are designed to Council's Engineering Standards. The Engineering Standards have been developed and revised over time to promote best practice and the use of low impact designs. The standards also promote designing to increase recreational amenity of assets and maintain environmental aspects such as natural habitats.

9.2 Significant Effects

The significant negative and significant positive effects are listed below in Table 9-1 and Table 9-2 respectively.

Table 9-1: Significant Negative Effects

Effect	Council's Mitigation Measure
Flooding (social and economic impacts).	Catchment management planning, hydraulic 13inimize, and operation/maintenance activities are used to identity capital works to alleviate flooding. Capital works implemented to alleviate flooding.
The discharge of stormwater and contaminants to sensitive receiving environments (environmental and cultural).	Catchment management planning is used to identity capital works to mitigate environmental impacts arising from stormwater discharges. Catchment management planning to support applications for discharge consents. Capital works identified in catchment management plans or required by resource consents.
The discharge of untreated wastewater to Council owned and maintained stormwater drains (environmental and cultural).	Council has an active maintenance programme on the wastewater network that 13inimizes risk of overflows. Council has a sewer overflow procedure including remedial actions and notifications.
Access denied to Council for maintenance of Council drains on private property, which could lead to flooding (social and economic impacts).	Council has easements in place for most drains on private property. Council has programmed to negotiate land entry agreements for drains on private property that are not currently covered by easement.

Table 9-2: Significant Positive Effects

Effect	Description
Flooding (social benefits)	Council maintains drainage to prevent disruption to normal community activities.
Flooding (economic benefits)	Council maintains drainage to avoid damage to private and public assets.
Contaminant discharge (environmental and cultural benefits)	Council stormwater discharges to a receiving environment can be controlled to minimise any negative environmental impact from the discharge.
Aquatic life (environmental and cultural benefits)	Fish passage and aquatic life is considered when implementing capital projects.
Low impact design (environmental and cultural benefits)	Council's engineering standards promote the enhancement of recreational and environmental amenity value when considering new assets.

9.3 Assumptions

Council has made a number of assumptions in preparing the AMP. These are discussed in detail in Appendix Q. Table 9-3 lists the most significant assumptions and briefly outlines the impact of the assumption.

Table 9-3: Significant Assumptions

Assumption Type	Assumption	Discussion
Financial Assumptions	That all expenditure has been stated in 1 July 2011 dollar values and no allowance has been made for inflation.	The LTP will incorporate inflation factors. This could have a significant impact on the affordability of the plans if inflation is higher than allowed for, but Council is using the best information practically available from Business and Economic Research Limited (BERL).
Asset Data Knowledge	That Council has sufficient knowledge of the assets and their condition so that the planned renewal work will allow Council to meet their levels of service.	There are several areas where Council needs to improve its knowledge and assessments but there is a low risk that the improved knowledge will cause a significant change to the level of expenditure required.
Growth Forecasts	That the District will grow as forecast in the Growth Demand and Supply Model (refer to Appendix F).	If the growth is significantly different it will have a significant impact. If higher, Council may need to advance capital projects. If it is lower, Council may have to defer planned works.
Network Capacity	That Council's knowledge of network capacity is sufficient enough to accurately programme capital works.	If the network capacity is less than assumed, Council may be required to advance capital works projects to address congestion. The risk of this occurring is low; however the impact on expenditure could be large. If the network capacity is greater than assumed, Council may be able to defer works. The risk of this occurring is low and is likely to have little impact.
Timing of Capital Projects	That capital projects will be undertaken when planned.	The risk of the timing of projects changing is high due to factors like, resource consents, funding and land purchase. Council tries to mitigate this issue by undertaking the consultation, investigation and design phases sufficiently in advance of the construction phase. If delays are

Assumption Type	Assumption	Discussion
		to occur, it could have major effects on the level of service.
Stormwater Discharge Quality	That no treatment will be required to stormwater discharges.	Until catchment management plans (CMPs) have been undertaken, the quality of the receiving environment is unknown, hence the quality required of stormwater discharges are unknown. At this stage, no allowance has been made for the treatment of stormwater. Individual catchments requiring stormwater treatment will be reassessed for inclusion in future AMPs.
Resource Consent Monitoring	That the costs identified in this AMP for the monitoring of Resource Consents is sufficient.	Until CMPs have been developed and resource consents applied for, the conditions requiring monitoring are unknown. Once this information is understood, Council may need to allocate additional costs for monitoring compliance against consent conditions.
Funding of Capital Projects	That the projects identified for subsidies will receive subsidy.	If subsidies are not secured, it may have significant effect on the levels of service as projects may be deferred due to lack of funding.
Accuracy of Capital Project Cost Estimates	That the capital project cost estimates are sufficiently accurate enough to determine the required funding level.	The risk of large under estimation is low; however the potential impact is moderate as Council may not be able to afford the true cost of the projects. Council tries to reduce the risk by including a standard contingency based on the projects lifecycle. Inflation adjustments are provided for in the Long Term Plan budgets.
Changes in Legislation and Policy	That there will be no major changes in legislation or policy.	The risk of major change is high due to the changing nature of the government and politics. If major changes occur it is likely to have an impact on the required expenditure. Council has not mitigated the effect of this.
Network Knowledge	That Council has sufficient knowledge of discharge quality and receiving environment to apply for discharge consent	Council has projects in progress, to gather information that will support resource consent applications. If the data collected does not meet expectations Council may need to gather additional data.

The most major capital projects and their main uncertainties are listed in Appendix Q.

9.4 Risk Management

Council's risk management approach is described in detail in Appendix Q.

This approach includes risk management at an organisational level (Level 1). The treatment measures and outcomes of the organisational level risk management are included within the LTP.

At an asset group level (Level 2), Council has identified 17 high or very high risks and planned mitigations measures to reduce these risks to nine high risks. Council has planned controls for the remaining nine high risks but even with the controls, they remain high. Council has decided to accept these risks. These are listed in Table 9-4.

Table 9-4: Significant Risks and Control Measures

Risk Description	Current Control	Proposed Control	Target Risk Level
Landowners: Changing land use impacts volume and quality of water entering our systems.	TRMP and Compliance. Engineering Standards. Input to zonal changes.	Monitor.	HIGH
Iwi: Ineffective relationship impacts operations, maintenance and renewal works.	Regular meetings.	Monitor.	HIGH
River Floods (1:400): Impacts networks conveyance.	No controls in place for this level.	Monitor.	HIGH
Extreme Weather (Rain): Impacts networks conveyance - surface water.	Weather warnings, pre-checks in place following weather warnings, regular maintenance and inspections. Increased maintenance following warnings.	Monitor.	VERY HIGH
Extreme Weather (Rain): Impacts networks conveyance - soakage network.	Roading network maintenance.	More frequent maintenance from roading department. Better sediment protection and assessment of soakage capacity. More input to development proposals.	HIGH
Extreme Weather (Rain): Impacts access to infrastructure.	Appropriate vehicles and resources in place.	Consider access requirements in more detail at design stage. Self cleaning units on intake structures.	HIGH
Storm Surge / Tide: Damages infrastructure.	Flood gates at Motueka. Early warning, increased checks and maintenance.	Better liaison with Civil Defence. Planning controls for development.	HIGH
Storm and Tide Surge: Impacts ability to discharge.	Flood gates at Motueka. Early warning, increased checks and maintenance.	Better liaison with Civil Defence. Planning controls for development.	HIGH
Storm and Tide Surge:	Flood gates at Motueka. Early	Better liaison with Civil	HIGH

Risk Description	Current Control	Proposed Control	Target Risk Level
Inundation of properties.	warning, increased checks and maintenance.	Defence. Planning controls for development.	

Council has also identified and assessed critical assets (Level 3), the physical risks to these assets and the measures in place to address the risks to the asset. This has led to a list of projects to mitigate the risks to acceptable levels. These include:

- catchment modelling
- proactive maintenance ahead of bad weather
- improved security of manholes and stormdrains
- assessment of new sub-divisions for secondary flow-paths.

9.5 Improvement Plan

Development of the improvement plan is discussed in Appendix V. It includes a table of planned improvements that are still to be implemented and information on how they have been budgeted. It is a snapshot of the improvement plan at September 2011. It is intended that the improvement plan is continually updated and monitored as a live document.

Appendix V also includes a summary of the key improvements that have been achieved since the preparation of the 2009 AMP.

10 SUMMARY OF COST FOR ACTIVITY

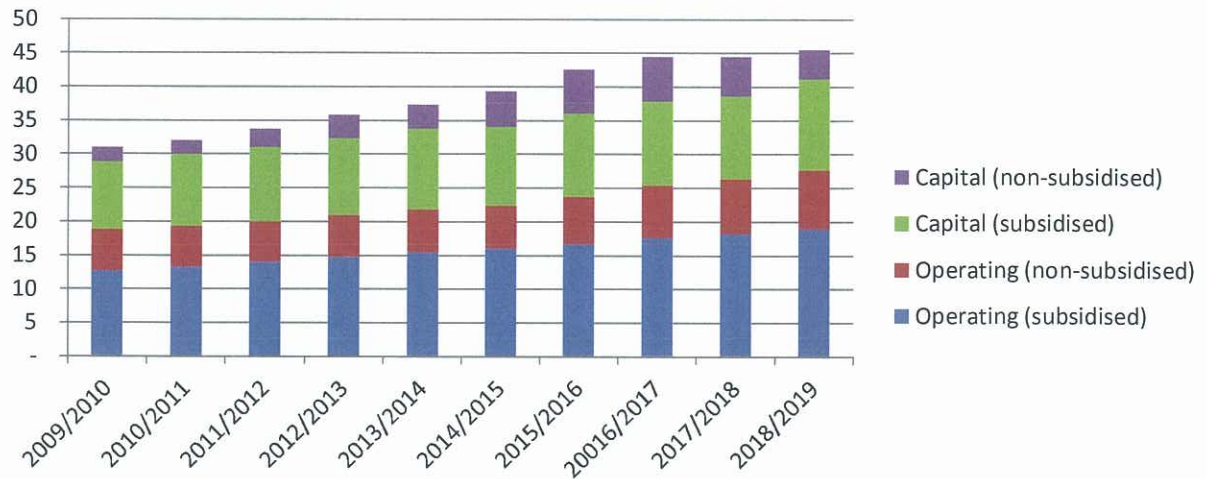


Figure 10-1: Total Expenditure (\$ million)

- **Place holder** – Discuss key features of what the data is showing and update with 2011 data.
- Refer to Appendix E, Appendix F and Appendix I for detailed operating and maintenance, new capital, and renewal projects respectively.

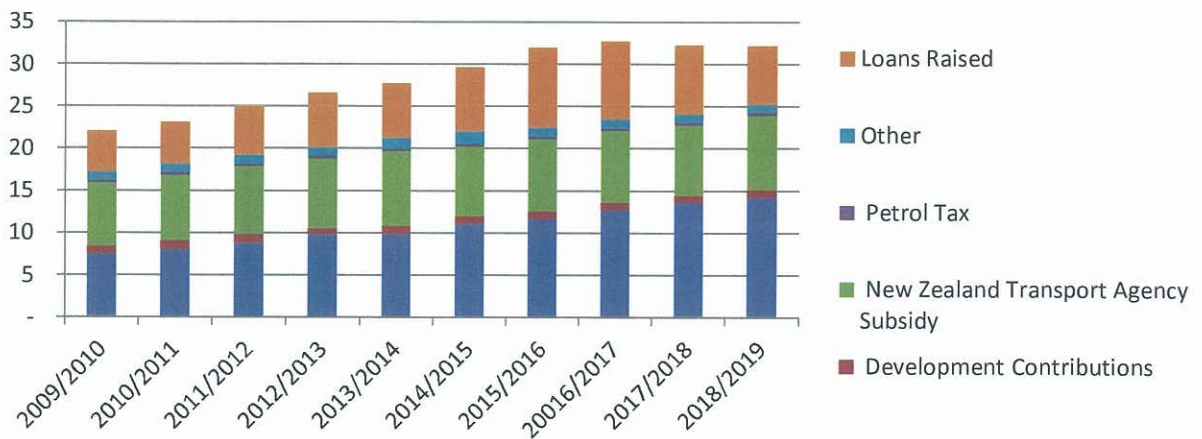


Figure 10-2: Total Income (\$ million)

- **Place holder** – Discuss key features of what the data is showing and update with 2011 data.
- Refer to Appendix L for full income details.

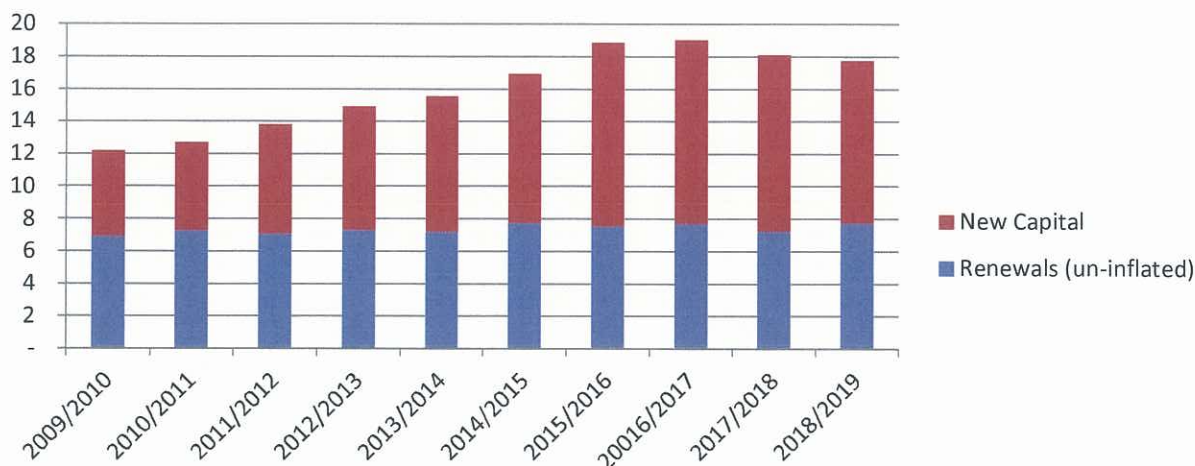


Figure 10-3: Capital Expenditure (\$ million)

- **Place holder** – Discuss key features of what the data is showing and update with 2011 data.
- Refer to Appendix F and Appendix I for a full list of new capital and renewal projects respectively.



Figure 10-4: Operating Expenditure (\$ million)

- **Place holder** – Discuss key features of what the data is showing and update with 2011 data.
- Refer to Appendix L for full operating expenditure details.

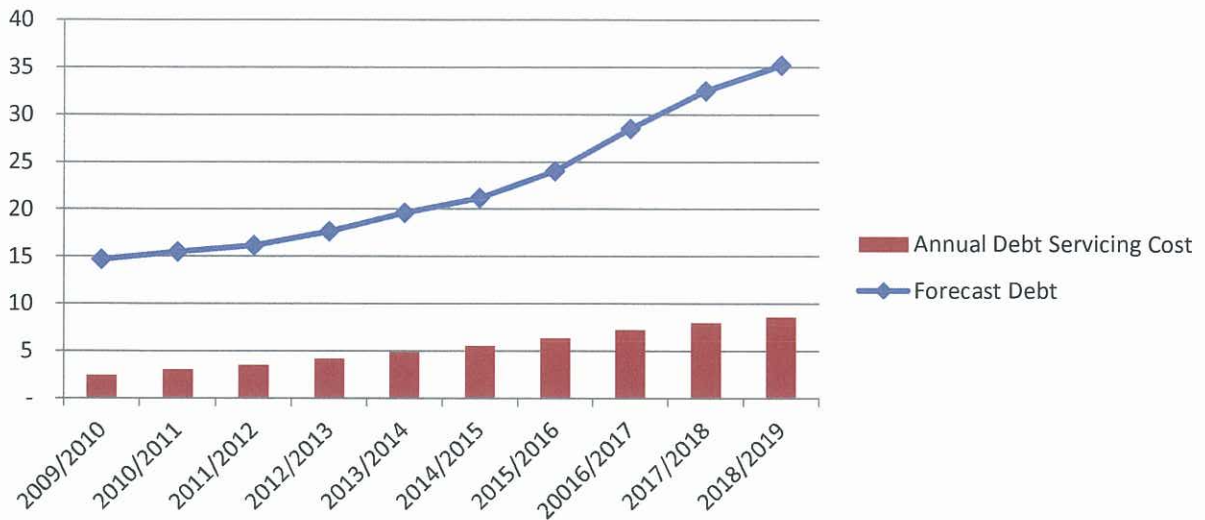


Figure 10-5: Debt (\$ million)

- **Place holder** – Discuss key features of what the data is showing and update with 2011 data.
- Appendix L for full Debt details

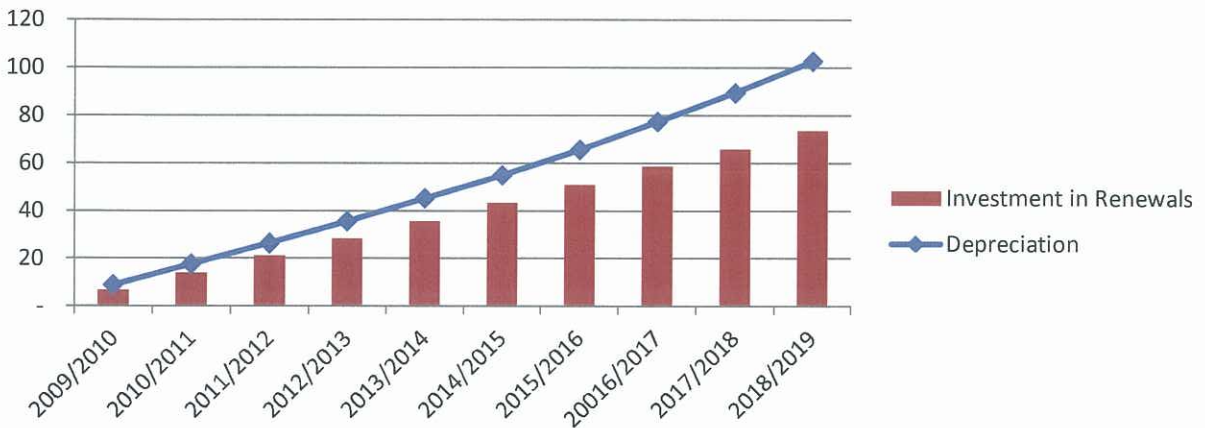


Figure 10-6: Investment in Renewals (\$ million)

- **Place holder** – Discuss key features of what the data is showing and update with 2011 data.
- Appendix L for full Investment and Renewal details

ALL TABLES ABOVE TO BE UPDATED WITH 2012 WHEN AVAILABLE